

2003 Urban Water Conservation Proposal

San Francisco Public Utilities
Commission



Commercial ULFT Rebate Program
in San Francisco

December 3, 2002

***Application Part A — Project
Description, Organizational, Financial
and Legal Information***

A-1 Urban Water Conservation Grant Application Cover Sheet

1. Applicant (Organization or affiliation): San Francisco Public Utilities Commission
2. Project Title: Rebates for Commercial Ultra Low Flush Toilets
3. Person authorized to sign and submit proposal:
- | | |
|------------------------|---------------------------|
| Name, Title | Michael Carlin |
| Mailing address | 1145 Market St, Suite 401 |
| Telephone | 415 934 5787 |
| Fax | 415 934 5750 |
| E-mail | mcarlin@puc.sf.ca.us |
4. Contact person (if different):
- | | |
|------------------------|---------------------------|
| Name, Title | Suzanne Arena |
| Mailing address | 1145 Market St, Suite 401 |
| Telephone | 415 934 5701 |
| Fax | 415 934 5750 |
| E-mail | sarena@puc.sf.ca.us |
5. Funds requested (dollar amount): \$75,000
6. Applicant funds pledged (local cost share) (dollar amount): \$38,548
7. Total project costs (dollar amount): \$113,548
8. Estimated net water savings (acre-feet/year): 45
Estimated total amount of water to be saved (acre-feet): 675
Over years 15 years
- Benefit/cost ratio of project for applicant: ____\$1.33/\$1.00_____
Estimated \$/acre-feet of water to be saved: \$2,750_____
9. Project life (month/year to month/year): 10/03-10/05
10. State Assembly District where the project is to be conducted: 12 & 13
11. State Senate District where the project is to be conducted: 3 & 8
12. Congressional District(s) where the project is to be conducted: 8
13. County where the project is to be conducted: San Francisco
14. Do the actions in this application involve physical changes in land use, or potential future changes in land use?
(a) Yes
(if yes, complete the land use check list at
http://www.calfed.water.ca.gov/adobe_pdf/Questionnaires_EC_Permits_LandUse.pdf and submit it with the proposal
(b) No No

A-2 Application Signature Page

By signing below, the official declares the following:

The truthfulness of all representations in the application;

The individual signing the form is authorized to submit the application on behalf of the applicant;

The individual signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the application on behalf of the applicant; and

The applicant will comply with all terms and conditions identified in this Application Package if selected for funding.

Signature

Name and title

Date

A-3 Application Checklist

Complete this checklist to confirm all sections of this application package have been completed.

Part A: Project Description, Organizational, Financial and Legal Information

- _____ A-1 Urban Water Conservation Grant Application Cover Sheet
- _____ A-2 Application Signature Page
- _____ A-3 Application Checklist
- _____ A-4 Description of project
- _____ A-5 Maps
- _____ A-6 Statement of work, schedule
- _____ A-7 Agency authority
- _____ A-8 Operation and maintenance (O&M)
- _____ A-9 Innovation

Part B: Engineering and Hydrologic Feasibility (construction projects only)

- _____ B-1 Certification statement
- _____ B-2 Project reports and previous studies
- _____ B-3 Preliminary project plans and specifications
- _____ B-4 Construction inspection plan

Part C: Plan for Environmental Documentation and Permitting

- _____ C-1 CEQA/NEPA
- _____ C-2 Permits, easements, licenses, acquisitions, and certifications
- _____ C-3 Local land use plans
- _____ C-4 State and local statutes and regulations

Part D: Need for Project and Community Involvement

- _____ D-1 Need for project
- _____ D-2 Community involvement, support, opposition

Part E: Water Use Efficiency Improvements and Other Benefits

- _____ E-1 Water use efficiency improvements
- _____ E-2 Other project benefits

Part F: Economic Justification, Benefits to Costs Analysis

- _____ F-1 Net water savings
- _____ F-2 Project budget and budget justification
- _____ F-3 Economic efficiency
- _____ Benefit/Cost Analysis Tables 1; 2; 3; 4a, 4b, 4c, 4d; and 5

Description of project

The San Francisco Public Utilities Commission is requesting \$75,000 to create a toilet rebate program for food establishments. Currently, SFPUC has an existing toilet rebate program for residential accounts. This new program will be specifically geared toward the replacement of low efficient toilets at restaurants, bars and coffeehouses in San Francisco. Due to the high number of tourists visiting San Francisco, 30-45% of a restaurant's customer base use the restaurant's restrooms. The SFPUC and the restaurants would realize a substantial savings in water supply (for the City) and water costs (for the business) with the replacement of water inefficient toilets with 1.6 gallon per flush toilets in restaurants, bars and coffeehouses.

A total of 1,000 rebates of \$75 per toilet over a two-year period would be made available to San Francisco restaurants. Due to budget constraints, the San Francisco Public Utilities Commission has limited its rebate program to single-family and multifamily accounts.

This new program would compliment San Francisco's existing residential Ultra Low flush toilet rebate program. Since January 1995, SFPUC has replaced 23,000 toilets throughout its toilet rebate program. Over the last six years, San Francisco has also conducted 37 sales where we have sold 36,000 ultra low flush toilets to San Francisco residents for only \$10. With a total of 59,000 toilets replaced at a savings of 20 ccf per toilet per year, the annual savings would be 1,156,652 ccf. The calculation using the estimate that the restaurants will be open for business 312 days per year.

Building upon the success of the residential toilet program, the SFPUC would like to expand into the commercial sector for potential water savings. The primary objective of the program is to save water in a cost-effective manner that is responsive to customer needs. The SFPUC believes that the commercial sector in San Francisco would provide a new arena of water savings to an industry that we have not previously sought out. The SFPUC believes that with financial incentives, the industry will be highly receptive to the retrofit program. The project is straightforward and will yield verifiable and quantifiable water savings. The benefit to cost ratio is \$5.96/1 (\$447 for water savings for 20 ccf for 15 years under the City's current water consumption charges to \$75 for the rebate).

The goal of the Proposition 13 Water Conservation Program is to accelerate the implementation of cost effective actions to help meet the growing demand for clean and abundant water supplies throughout the state. The SFPUC believes that a commercial ULFT rebate program especially targeted to restaurants will yield significant savings in an area yet to be reached in San Francisco. The SFPUC believes that this grant will allow for the establishment of a new and exciting water conservation program and allow us to gauge the interest of the commercial and eventually industrial communities in San Francisco.

The SFPUC's Water Conservation Unit will administer the program. The Water Conservation Unit has a proven track record of administering water conservation rebate programs in the San Francisco region. The Unit will be responsible for the following tasks:

1. Design, marketing and promotion of the commercial ULFT rebate program to restaurants, bars and coffeehouses in San Francisco
2. Act as a liaison between the targeted facilities and the SFPUC
3. Design and print rebate forms
4. Process rebates
5. Develop and maintain a database of customer's receiving rebates
6. Oversee and verify retrofit acting also as a liaison as needed
7. Administer a customer satisfaction survey
8. Submit requisite programmatic and fiscal reports of program activities and successes

See Attachment A for schedule of tasks

A-7 Monitoring and evaluation

The SFPUC Water Conservation Unit will conduct monitoring and assessment of the new Commercial ULFT program. The Unit will maintain a database indicating customer rebate amounts paid, rebates received and balance due (year to date). On a quarterly basis, the Unit will also provide the Commission (the overseeing governing body of the SFPUC) a spreadsheet listing the name, address and account number of the rebate applicant, customer satisfaction information and post-project water savings information after the equipment is retrofitted. Customer satisfaction surveys will be administered to gauge the success of the program and to solicit comments and suggestions. Quarterly reports will be issued to the Department of Water Resources (DWR) as required.

Expected outcomes:

Quantification of water savings will be based on information from the California Urban Water Conservation Council's CII ULFT Savings Study, 2001. The SFPUC expects to see an average of 47 gallons per day, per toilet that is retrofitted. Quarterly spreadsheets will document the actual water savings.

Performance measures:

1. Complete development and printing of rebate materials by end of 1st Quarter
2. Begin marketing and liaison activities by beginning of 2nd Quarter
3. Review customer satisfaction surveys and take corrective measures as necessary end of 4th Quarter
4. Document water savings end of 4th Quarter

A-8 Qualifications of Applicant

Ms. Kim Knox, Water Conservation Coordinator for the SFPUC, will be the project

manager. See resume Attachment B

A-9 Innovation

The SFPUC has built a highly successful ULFT rebate program that has been aimed at our residential customers. Over the past six years the SFPUC has sold 33,000 ultra low flush toilets for \$10 resulting in a water savings of 800 CF per toilet per year. Since the average life of a toilet is 15 years the resulting water savings from these toilets sales is 396,000,000 CF of water. Due to budget constraints, the San Francisco Public Utilities Commission has limited its rebate program to single-family and multifamily accounts.

SFPUC believes that significant water savings can be achieved in the restaurant sector and would like to use the grant to test the level of interest in the industry. We will build on the success that this grant allows and expand the program to be the most responsive to our customers.

A-10 Agency Authority

1. SFPUC has the legal authority to submit this application and enter into a funding contract. A resolution of support for this application will be forthcoming.
2. SFPUC is the department of the City and County of San Francisco (a Charter City), which is responsible for delivering water to the City and County of San Francisco and for operating the regional water system known as Hetch Hetchy.
3. No election is required before entering into a funding contract with the State.
4. The funding agreement will be subject to the review of the City and County of San Francisco City Attorney's office. The City Attorney has already reviewed this application any does not foresee and potential conflicts.
5. There is no pending litigation that would impact the SFPUC's ability to complete this proposed project.

A-11 Operations and Maintenance

Not required for this proposed project.

Part B

Not required for this proposed project.

Part C

This proposed project would not be subject to CEQA or NEPA.

Part D

D-1

The efficient use of California's limited water supplies is a critical local, regional, and statewide issue. In an effort to address this issue, the SFPUC has made, and will continue to make investments in water use efficiency programs that will:

- Delay the need to examine other sources of future water supplies
- Achieve objectives detailed in the SFPUC's 2000 Urban Water Management Plan
- Comply with its obligations as a signatory to the California Urban Water Conservation Council's Memorandum of Understanding Regarding Urban Water Conservation in California (MOU)

The purpose of this Program is to significantly increase water use efficiency by offering restaurants, bars and coffeehouses financial incentives to retrofit water inefficient toilets with ULFTs. Implementation of this program fulfills Best Management Practice Number 9 , Conservation Programs for Commercial, Industrial and Institutional Accounts, as defined in the MOU. ULFTs save 47 gallons or more per day. Providing financial incentives to restaurants, bars and coffeehouses to encourage these businesses to retrofit their toilets will yield significant savings in water to the City and significant savings to the customer in their water bills. This program is a win-win partnership.

Currently, the SFPUC offers water conservation audits as well as other conservation services to businesses. This new program will expand the services and incentives that the SFPUC offers the industry, and allow a closer working relationship with businesses to discuss and develop other potential water savings opportunities. Awarding of this grant will allow the SFPUC to enter into a new arena of commercial water conservation and achieve significant water savings for the City and its customers.

This proposal has the potential to positively impact the Bay-Delta systems. Through the installation of commercial ULFTs, water quality in the San Francisco Bay may be improved by reducing the amount of wastewater flows. In addition, conservation efforts will slow the need to examine sources of future water supplies other than Hetch Hetchy. The SFPUC's conservation efforts are important as part of a long-term, comprehensive effort to reduce pressure on the Bay-Delta system to meet regional and statewide water needs. One of the fundamental objectives of the CALFED Bay-Delta Program is to reduce the disparity between Bay-Delta water supplies, and current and projected beneficial uses dependent on the Bay-Delta system. Water use efficiency projects are one of the cornerstone strategies that CALFED is implementing to achieve this objective. Incentives for the purchase and installation of commercial ULFTs will reduce the demand for a significant urban use of Bay-Delta water supplies.

This is a locally cost-effective program relative to savings in production and operating costs as shown in Part F. This Project is compatible with goals included in the SFPUC's 2000 Urban Water Management Plan and its ongoing efforts to achieve greater water use efficiency through programs for reducing long-term commercial water demands.

D-2 Outreach, Community Involvement, Support, Opposition

D-2 Outreach, Community Involvement, Support and Opposition

Public outreach efforts will include working with Local 38-Plumbers and Steamfitters Union, plumbing contractors, plumbing supply stores, hardware stores and the City's two restaurant associations. Since the SFPUC's billing system identifies all commercial accounts by their Standard Industrial Classification (SIC) code, two targeted mailings will be sent to all restaurants that have individual meters with the SFPUC. (A small number of restaurants and coffeehouses are housed in hotels or office buildings and do not have a separate water meter.)

Outreach Efforts

An effective public outreach effort is essential to the project's success. Customer contact will be made through various means including the Chamber of Commerce, the Golden Gate Restaurant Association, the Board of Supervisor's public hearings and disadvantaged community members, to promote and reinforce water use efficiency by providing financial incentives to purchase commercial ULFTs. The partnership that has already been developed between the SFPUC and local environmental and community groups through the SFPUC's successful residential ULFT Rebate Program will ensure that a large and economically diverse customer base will be reached.

Part E – Water Use Efficiency Improvements and other Benefits

E-1

The benefits of the Program are consistent with water conservation goals included in the SFPUC's Urban Water Management Plan. The Program is consistent with CALFED's objectives as expressed in its Framework for Action (June 9, 2000) and the Record of Decision that followed. The Program will increase the amount of water saved through conservation by assuring that the SFPUC's commercial accounts are offered financial incentives to retrofit their water inefficient toilets with ULFTs.

Through the installation of 1000 ULFTs, a total of 19,604 ccf or 45 acre-feet of water per year will be saved and 677 acre-feet of water will be saved over the estimated 15-year life of the machines. This calculation is using the estimate that the average restaurant would be open for business 312 days per year. This Program will support DWR's and CALFED's water conservation objectives in the following manner:

- Delay the need to examine other sources of future water supplies.
- Through the installation of ULFTs in San Francisco's restaurants, water quality in the San Francisco Bay may be improved by reducing the amount of wastewater flows.

- Enhance the aquatic habitats and ecological functions in the Bay-Delta by water conservation efforts in San Francisco.
- Reduce the disparity between Bay-Delta water supplies, and current and projected beneficial uses dependent on the Bay-Delta system.
- Water Savings and their value are based on the table below:

Benefit/Unit	# of Units	Total Benefit			Present Value Of Total Benefit	
Acre-Feet/ULFT	ULFT	Acre-Feet	Alt. Supply (1)		Alt. Supply (2)	
	.677	1000	677	\$ 1,861,750		\$ 43

1. Based on alternative supply development cost of \$2,750 acre-foot for 8 years, as documented in the "Water Supply Master Plan" prepared by the San Francisco Public Utilities Commission and the Bay Area Water User's Association in February 2000.
2. Based on a discount rate of 6% and a 10-year savings, beginning in year one.

E-2 Other Project Benefits

There are many project benefits that cannot be effectively quantified at this point in time. These are:

- The new program (the liaison component in particular) will give us access to commercial businesses that we have not previously contacted. We will use the opportunity to offer water audits and educate businesses about other water conservation methods.
- Improved local watershed ecosystem by decreasing diversions from local creeks and reservoirs thereby benefiting in-stream uses.
- Sustained economic health of Bay Area business communities in San Francisco. Water supply reliability is a key element in the continued growth and vitality in California. Water conservation is a primary component of the SFPUC's 2000 Urban Water Management Plan.
- Water conservation through the retrofit of water inefficient toilets with commercial ULFTs at restaurants, bars and coffeehouses is an innovative new conservation arena for the SFPUC.
- Customer awareness and attitudes towards water conservation are heightened.
- Relief for the SFPUC agency infrastructure. The SFPUC can avoid upsizing infrastructure to meet future peak demands through conservation. Water use efficiency decreases the amount of wastewater produced.

Part F – Economic Justification: Benefits to Costs

F-1 Net Water Savings

Through the installation of 1000 ULFTs, a total of 45 acre-feet of water per year will be saved and 677 over the estimated 15-year life of the toilets. SFPUC has

requested funds in their budget for FY 03-04 for a study on quantifying the savings resulting from these rebate program.

F-2 Project Budget and Budget Justification

Table 1: Capital Costs

	Capital Cost Category (a)	Cost (b)	Contingency Percent (c)	Contingency \$ (d)	Subtotal (e)
				(bxc)	(b+d)
(a)	Land Purchase/Easement	\$0			\$0
(b)	Planning/Design/Engineering	\$0			\$0
(c)	Materials/Installation	\$0			\$0
(d)	Structures	\$0			\$0
(e)	Equipment Purchases/Rentals	\$0			\$0
(f)	Environmental Mitigation/Enhancement	\$0			\$0
(g)	Construction/Administration/Overhead	\$0			\$0
(h)	Project Legal/License Fees	\$0			\$0
(i)	Other	\$0			\$0
(j)	Total (1) (a + ... + i)	\$0			\$0
(k)	Capital Recovery Factor: use Table 6	\$0			\$0
(l)	Annual Capital Costs (j x k)	\$0			\$0

(1) Costs must match Project Budget prepared in Section F-2.

Table 2: Annual Operations and Maintenance Costs

Administration (a)	Operations (b)	Maintenance (c)	Other (d)	Total (e)
\$9,348	\$19,100		\$10,100	38,548

Table 3: Total Annual Costs

Annual Capital Costs (1) (a)	Annual O&M Costs (2) (b)	Total Annual Costs (c) (a+b)
	\$38,548	\$38,548

- (1) From Table 1 line (l)
- (2) From Table 2 Total, column (e)

Budget Justification:

Direct labor – [NOTE: These costs are borne by the applicant]. Day to day administration of the rebate program, including marketing and printing, application processing, record keeping, liaison function, and installation verification inspections.

Other Direct Costs – ULFT rebates provide up to \$75 towards the purchase and installation of the ULFT. This proposal would use the entire requested grant amount of \$75,000 to cover the cost of the ULFT rebates ($\$75,000/\$75 \text{ per rebate} = 1000$ rebates).

Table 4: Water Supply Benefits

Net water savings (acre-feet/year) _____45_____

4a. Avoided Costs of Current Supply Sources

Sources of Supply (a)	Cost of Water (\$/AF) (b)	Annual Displaced Supply (AF) (c)	Annual Avoided Costs (\$) (d) (b x c)
Hetch Hetchy	\$625	45	\$28,145
Total			

4b. Alternative Costs of Future Supply Sources

Future Supply Sources (a)	Total Capital Costs (\$) (b)	Capital Recovery Factor (1) (c)	Annual Capital Costs (\$) (d) (b x c)	Annual O&M Costs (\$) (e)	Total Annual Avoided Costs (\$) (f) (d + e)
Hetch Hetchy Upgraded	\$0			\$2,750	\$123,750
Total					

(1) 6% discount rate; Use Table 6- Capital Recovery Factor

4c. Water Supplier Revenue (Vendibility)

Parties Purchasing Project Supplies (a)	Amount of Water to be Sold (b)	Selling Price (\$/AF) (c)	Expected Frequency of Sales (%) (1) (d)	Expected Selling Price (\$/AF) (e) (c x d)	"Option" Fee (\$/AF) (2) (f)	Total Selling Price (\$/AF) (g) (e + f)	Annual Expected Water Sale Revenue (\$) (h) (b x g)
SFPUC	45 AF	\$625	100%	\$625.00	\$0	\$625.00	
Total							

- (1) During the analysis period, what percentage of years are water sales expected to occur? For example, if water will only be sold half of the years, enter 50% (0.5).
- (2) "Option" fees are paid by a contracting agency to a selling agency to maintain the right of the contracting agency to buy water whenever needed. Although the water may not be purchased every year, the fee is usually paid every year.

4d: Total Water Supply Benefits

(a) Annual Avoided Cost of Current Supply Sources (\$) from 4a, column (d)	\$28,145
(b) Annual Avoided Cost of Alternative Future Supply Sources (\$) from 4b, column (f)	\$123,750
(c) Annual Expected Water Sale Revenue (\$) from 4c, column (h)	
(d) Total Net Annual Water Supply Benefits (\$) (a + b + c)	\$151,895

Table 5: Benefit/Cost Ratio

Project Benefits (\$) (1)	\$151,895
Project Costs (\$) (2)	\$38,548
Benefit/Cost Ratio	\$113,347

(1) From Tables 4d, row (d): Total Annual Water Supply Benefits

(2) From Table 3, column (c) : Total Annual Costs

Table 6: Capital Recovery Factor

(Use to obtain factor for Table 1, Line k or Table 4b, Column (c))

Life of Project (in years)	Capital Recovery Factor
7	0.1791
8	0.1610
9	0.1470
10	0.1359
11	0.1268
12	0.1193
13	0.1130
14	0.1076
15	0.1030
16	0.0990
17	0.0954
18	0.0924
19	0.0896
20	0.0872
21	0.0850
22	0.0830
23	0.0813
24	0.0797
25	0.0782
26	0.0769
27	0.0757
28	0.0746
29	0.0736
30	0.0726
31	0.0718
32	0.0710
33	0.0703
34	0.0696
35	0.0690
36	0.0684
37	0.0679
38	0.0674
39	0.0669
40	0.0665
41	0.0661
42	0.0657
43	0.0653
44	0.0650
45	0.0647
46	0.0644
47	0.0641
48	0.0639
49	0.0637
50	0.0634

Attachment A

ULTF Rebate Program for Restaurants (Bars and Coffeehouses) in San Francisco Schedule

Tasks	Year 1				Year 2							
	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter				
Design, market and promote materials for rebate program	X	X			X							
	\$				\$							
Provide Liaison to qualified facilities	X	X	X	X	X	X	X	X				
	\$	\$	\$	\$	\$	\$	\$	\$				
Design and print rebate forms		X			X							
	\$				\$							
Process and Distribute rebate materials		X	X	X	X	X	X	X				
	\$	\$	\$	\$	\$	\$	\$	\$				
Develop a customer database of customers receiving rebates	X											
	\$				\$							
Generate internal progress reports and implement corrective measures as necessary	X	X	X	X	X	X	X	X				
	\$	\$	\$	\$	\$	\$	\$	\$				

Customer Satisfaction Surveys			X	X	X	X	X	X				
	\$	\$	\$	\$	\$	\$	\$	\$				
Produce Quarterly Progress Reports for DWR	X	X	X	X	X	X	X	X				
	\$	\$	\$	\$	\$	\$	\$	\$				
Produce Final Program Report				X				X				
				\$				\$				
Quarterly Costs	\$5,000	\$13,000	\$13,000	\$13,000	\$13,000	\$13,000	\$13,000	\$30,546				
Total Program Cost								\$113,546				